UNITED NATIONS

Framework Convention on Climate Change

Distr.
GENERAL

FCCC/SBI/1996/5
2 February 1996

Original: ENGLISH

SUBSIDIARY BODY FOR IMPLEMENTATION
Second session
Geneva, 27 February - 4 March 1996
Item 5 of the provisional agenda

TRANSFER OF TECHNOLOGY

Note by the secretariat

CONTENTS

		Paragraphs	Page
I.	INTRODUCTION	1 - 7	2
	A. Mandate	1 - 2	2
	B. Scope of the note	3 - 5	3
	C. Possible action by the Subsidiary Body for Implementation	6 - 7	4
II.	GENERAL FINDINGS	8 - 12	4
III.	POSSIBLE ISSUES FOR CONSIDERATION BY THE SUBSIDIARY BODY FOR IMPLEMENTATION	13 - 19	5
	Annex		
	Progress report on transfer of technology by Annex II Parties		8
	Appendix		
	National communications of Annex II Parties reviewed for this document		14

GE.96-60388

I. INTRODUCTION

A. Mandate

1. The Conference of the Parties (COP), at its first session, by its decision 13/CP.1,* requested the Convention secretariat:

(a) "To prepare an itemized progress report (according to the types of activities specified in paragraphs 34.15 to 34.28, inclusive, of chapter 34 of Agenda 21) on concrete measures taken by the Parties listed in Annex II to the Convention, with respect to their commitments related to the transfer of environmentally sound technologies and the know-how necessary to mitigate and facilitate adequate adaptation to climate change ...";

(b) "To submit the documents referred to ..., through the Subsidiary Body for Scientific and Technological Advice, to the Conference of the Parties at its second session, and to update them at regular intervals ... for consideration by the Conference of the Parties at each of its sessions"; and

(c) Urged:

(i) "The Parties listed in Annex II to the Convention to include in their national communications the measures taken for the transfer of technology in order to enable the Convention secretariat to compile, analyse and then submit the above-mentioned documents to each session of the Conference of the Parties";

(ii) "Other Parties to include in their communications, where possible, information on measures taken for the transfer of technology in order to enable the Convention secretariat to compile, analyse and then submit the above-mentioned documents to each session of the Conference of the Parties".

2. The division of labour between the subsidiary bodies established by the Convention in implementing decision 13/CP.1 was clarified through the adoption of the draft programmes of work prepared for the first sessions of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and of the Subsidiary Body for Implementation (SBI), respectively, (FCCC/SB/1995/INF.1). In the light of decision 13/CP.1, and also of decision 6/CP.1 which requires the SBI to advise the COP on transfer of technology and to consider the implementation of Article 4.5, the SBI is "to focus on issues relating to transfer of technology and implementation of related commitments" and "consider the 'itemized progress report' on implementation of transfer of technology commitments and the

---

* For decisions adopted by the Conference of the Parties at its first session, see document FCCC/CP/1995/7/Add.1.

elaboration on the terms of transfer." The SBSTA is "to focus on issues relating to technology identification, assessment and development" and "consider the technology 'inventory and assessment' document" (FCCC/SB/1995/INF.1, para. 11). The initial consideration of the itemized progress report by the SBI follows this division of labour. A discussion of guidelines for the preparation of communications from Annex I Parties, which is related to the issue under consideration in this note, is to be conducted under item 5 (a) (iii) of the provisional agenda of the SBSTA (FCCC/SBSTA/1996/1). Information on guidelines for the preparation of these national communications may be found in A/AC.237/55, annex I, while information on technology transfer is given in a note of 18 January 1995 prepared by the interim secretariat (A/AC.237/88).

B. Scope of the note

3. An initial progress report is given in the annex to this note. It provides a synthesis of information on activities to facilitate the transfer of technology as reported by Annex II Parties in their national communications and of information obtained in the course of the in-depth reviews of those Parties. It also expands upon information presented in the compilation and synthesis of national communications from Annex I Parties (A/AC.237/81). The report is organized around information on three types of cooperation, that is, multilateral, bilateral and private sector cooperation, the common elements found in most national communications, and the key topics in chapter 34 of Agenda 21.

4. The national communications of 21 Annex II Parties listed in the appendix to this note were reviewed in the preparation of the progress report. Four Parties did not report on activities related to the transfer of technology. Consequently, the itemized progress report is based on the information contained in 17 national communications. In this context, it should be noted that almost all the 21 communications had been completed before decision 13/CP.1 was agreed so the Parties concerned were not yet in a position to respond to the request cited in paragraph 1 (c) above.

5. The term "transfer of technology", as used in this note, encompasses practices and processes such as 'soft' technologies, for example, capacity building, information networks, training and research, as well as 'hard' technologies, for example, equipment to control, reduce or prevent anthropogenic emissions of greenhouse gases in the energy, transport, forestry, agriculture, and industry sectors, to enhance removals by sinks, and to facilitate adaptation. Furthermore, it is recognized in this note that "transfer of technology" may come about in several ways; in some cases, for instance, it may be the direct result of a joint project among Parties or in the private sector. In other cases, it may be the indirect result of a financial transfer to a multilateral institution, part of which may be used for a technology project.

C. Possible action by the Subsidiary Body for Implementation

6. When considering this note, the SBI may wish to examine in particular the issues identified in section III. It may seek to clarify the information it needs on these issues and request the SBSTA to prepare additional guidelines for consideration at the third session of that body.

7. The SBI may also wish to request the secretariat to provide a compilation of the views on this subject transmitted by the Parties to the secretariat by **15 April 1996**, in order to assist the SBSTA, at its third session, in formulating and considering revised guidelines.

II. GENERAL FINDINGS

8. The national communications of Annex II Parties were based on the guidelines for the preparation of first communications by Annex I Parties (A/AC.237/55, annex I, decision 9/2). However, the section of the guidelines on technology transfer is very general in nature and easily subject to different interpretations by the Parties. As a result, the information contained in Annex II communications differs considerably in format, comprehensiveness and level of detail. Moreover, discussions held during the in-depth review visits have revealed that much more information is available than has been provided in the communications, but has not been compiled and presented in an organized manner. Finally, most Annex II national communications focus on government-supported activities rather than those of the private sector. As a result, a comprehensive picture of technology transfer activities is not available at the present stage.

9. Multilateral cooperation is an important element in many of the national communications. Several Parties indicated their support for multilateral organizations engaged in work related to capacity building, research, and information transfer. Contributions to the Global Environment Facility were reported by virtually all Annex II Parties, but contributions to other multilateral financial institutions were not reported on a consistent basis. For example, although most Annex II Parties make contributions to the World Bank and various regional development banks, these were reported by a few Parties only. A small number of Parties provided considerable data on their official development assistance, but it was often difficult to distinguish the portion that was related to climate change. The relationship between such multilateral financing and transfer of technology was not usually made explicit.

10. Bilateral activities related to the transfer of technology were reported by most Annex II Parties, but the comprehensiveness and level of detail of the information differ significantly. For example, one Party gave detailed information on more than 30 bilateral projects directed at greenhouse gas mitigation in developing countries and countries with economies in transition. Most other Parties, however, provided only a general overview of their bilateral projects. Some Parties highlighted information on one or two examples of such projects.

11. Bilateral activities related to the transfer of 'hard' technologies were reported more often than activities related to the transfer of 'soft' technologies through capacity building, training, and research. The technologies most frequently identified were those to reduce greenhouse gas emissions or enhance carbon sequestration in forestry, energy supply, or energy demand in the residential, commercial, or industrial sectors. Only four Annex II Parties identified specific bilateral projects that would facilitate climate change adaptation.

12. Six Annex II Parties reported on actions they had taken to facilitate the transfer of technology through the private sector. For the most part, these activities were directed at linking their own private sector companies with private sector companies in developing countries. Some Parties also indicated that they supported private sector investments either directly (through joint ventures) or indirectly (by feasibility studies). In fact, there are substantial capital investments being made in developing countries by the private sector of developed countries, which were reported as having been between US$80 billion and US$100 billion in 1994.* However, these investment flows, in particular the portion relevant to climate change, were poorly represented in the national communications.

III. POSSIBLE ISSUES FOR CONSIDERATION BY THE SUBSIDIARY BODY FOR IMPLEMENTATION

13. In view of the wide range of approaches taken by Annex II Parties in reporting on activities related to the transfer of technology, it is important to clarify the levels of **comprehensiveness**, **comparability**, and **detail** required of the information to be reported in the national communications due in 1997. The following paragraphs are intended to assist the SBI in its consideration of the matter.

14. Developing more comprehensive, comparable, and detailed information may prove useful for a number of reasons. For example, private investment flows in energy, industry, and other sectors may be a leading indicator of future emissions, or information on technology cooperation with international centres may help Parties either to prevent duplication or reveal gaps. However, obtaining better data may be resource intensive, so Parties should carefully consider the purposes of collecting additional and higher quality data. In considering this aspect, it may be useful to distinguish between what is necessary versus what is desirable in future communications and what may be required in the long term.

15. In clarifying to the SBSTA the kind of information it needs, the SBI may wish to indicate how comprehensive future national communications should be. **Comprehensiveness** can be defined along a number of different axes, including:

---

* United Nations Conference on Trade and Development, *World Investment Report, 1994, Transnational Corporations, Employment and the Workplace* (United Nations publication, Sales No. E.94.II.A.14).

- Type of cooperation, for example, multilateral or bilateral, or by private sectors

- Type of activity, for example, information exchange, research, capacity building, training, feasibility studies, design work, construction, operation and maintenance, monitoring

- Sector targeted, for example, energy, industry, transportation, agriculture, forestry, waste management

16. Several options are presented below to illustrate different levels of comprehensiveness. (Other options with varying combinations of types of cooperation, types of activity, and sectors targeted are also possible.)

Option 1: All types of activity supported by Governments through multilateral cooperation in the energy sector

Option 2: All types of activity covered by option 1, but also including all sectors and bilateral cooperation between Governments

Option 3: All types of activity covered by options 1 and 2, as well as those undertaken through the private sector

17. It should be noted that reporting all private sector investments as suggested in option 3 would be an extremely complex task. Parties should therefore carefully consider to what extent they need this type of information. It will, however, remain difficult to construct a complete picture of technology transfer without information on private investment flows.

18. If Parties wish to improve **comparability** of information they should carefully consider how this needs to be provided. For example, the itemized progress report does not discuss the financial resources allocated to transfer of technology by Annex II Parties because the time-frames over which the related activities are reported differ from one national communication to another, making it impossible to aggregate and compare the information given. This problem could be remedied if information is reported for specific years. Similarly, activities involving developing countries could be differentiated from those concerning countries with economies in transition, and adaptation could be distinguished from mitigation. Furthermore, supplementing the guidelines with a number of specific tables to be completed by each Party in its communication would improve the comparability of the communications.

19. Consistent and comparable information is not necessarily transparent. In clarifying to the SBSTA the type of information it needs, the SBI may wish to indicate the level of **detail** required to ensure transparent reporting, such as, for example:

(a) A narrative description of perhaps 10-20 major, individual programmes

(b) A narrative description of perhaps 10-20 major, individual projects;

(c) Funds available for each specific programme

(d) Expected changes in greenhouse gas emissions or expected enhancement of carbon sequestration as a result of these specific projects or programmes

Annex

PROGRESS REPORT ON TRANSFER OF TECHNOLOGY BY ANNEX II PARTIES

1. This initial report has been prepared in response to decision 13/CP.1 (see FCCC/CP/1995/7/Add.1). It also represents an extension of the information presented in the compilation and synthesis of national communications from Annex I Parties (A/AC.237/81). Further information on technology transfer may be found in a note of 18 January 1995 prepared by the interim secretariat (A/AC.237/88).

I. MULTILATERAL COOPERATION

A. Support for capacity building through international bodies

2. Nine of the Parties indicated that they had made contributions that either facilitated participation by developing country representatives in the Intergovernmental Panel on Climate Change (IPCC), the World Meteorological Organization (WMO), and the United Nations Environment Programme (UNEP), or had supported work by these bodies (for example, IPCC inventory methodologies or WMO regional programmes) that improved the capacity of developing countries to pursue climate change science or systematic observations.

3. Several Parties described support for a wide range of international bodies based in the Asia-Pacific region (for example, Asia-Pacific Network for Global Change Research, South Pacific Regional Environment Programme) that, as part of their mandate, undertake projects that will increase the capacity of developing countries to address the issue of climate change. Five countries noted that two European Community programmes: Poland and Hungary, Assistance for Reconstruction of the Economy (PHARE), and Technical Assistance for the Commonwealth of Independent States (TACIS), would contribute to capacity building. Others noted that work to protect and manage forests, carried out through the International Tropical Timber Organization or the Tropical Forestry Action Programme, would also enhance the capacity of developing countries to address climate change.

B. Support for research, development, and demonstrations of technologies and practices

4. Five Parties described their support for international research groups that are studying 'hard' and 'soft' technologies and practices that would facilitate climate change mitigation and adaptation in developing countries. The bodies most frequently mentioned are: the International Rice Research Institute, the Centre for International Forestry Research, the International Centre for Research on Agroforestry, and the Consultative Group on International Agricultural Research.

C. Support for international technology information networks and clearing-houses

5. Eight Parties indicated that they were supporting international organizations that broadly disseminate information on technologies that facilitate climate change mitigation or adaptation. The most commonly mentioned programmes were GREENTIE (under the auspices of the International Energy Agency and the Organisation for Economic Co-operation and Development), and the International Cleaner Production Information Clearing House managed by UNEP. Two Parties noted that the programme 'Energy Efficiency 2000' of the United Nations Economic Commission for Europe played a similar role in countries with economies in transition.

D. Programmes and projects that directly reduce greenhouse gas emissions or enhance carbon sequestration and enabling activities

(a) Global Environment Facility (GEF)

6. Twelve of the Parties reported on their support for the pilot phase of the GEF through contributions to the core fund, or through co-financing or parallel financing arrangements. Two Parties did not mention their contributions although they were contributors. One Party indicated that it had not contributed to the pilot phase. A significant number of Parties (15) indicated that they had made, or would make, contributions or pledges to the first replenishment of the GEF (1994-1997). While the other Parties did not address this matter in their national communications, the GEF secretariat has confirmed that they either made a contribution to the first replenishment or pledged to do so.

(b) Other multilateral financial institutions

7. Seven Parties mentioned their contributions to regional development banks, six Parties highlighted their contributions to the World Bank, and two Parties stated that they had contributed to the Montreal Protocol fund for the protection of the ozone layer. It should be noted that many of the Annex II Parties that did not report on contributions to these multilateral lending institutions do in fact make such contributions. With respect to countries with economies in transition, five Parties indicated that their contributions to the European Bank for Reconstruction and Development would result in the transfer of technology. In addition, five countries noted that two European Community programmes (PHARE and TACIS) would also contribute to this objective.

II. BILATERAL COOPERATION

8. Sixteen Parties provided information on bilateral programmes that facilitate the transfer of technology from Annex II Parties to other Parties under the Convention.

A. General financial assistance

9. France and Denmark stated that they had established development assistance funds targeted specifically at global environmental issues, including climate change. In addition, France and Portugal noted that they provided debt relief to developing countries and that this would make it easier for these countries to abandon environmentally unsustainable practices.

B. Support for capacity building

(a) Country studies

10. 'Country study' activities that assist countries with economies in transition and developing countries to develop greenhouse gas inventories, assess their vulnerability to climate change, and design climate change mitigation and adaptation response strategies were reported by eight Parties. A significant number of developing countries and countries with economies in transition are participating in these programmes, for example, 11 are participating in the Netherlands programme and more than 50 are participating in the United States programme. Many Annex II Parties stressed that the training and technical support provided through these programmes would assist developing countries and countries with economies in transition in preparing information for their national communications under the Convention.

(b) Scientific research

11. Eight Parties indicated that they were providing support for scientific research in developing countries that would improve the capacity of these countries to obtain data related to climate indicators (through support for meteorological organizations), pollution levels, or natural resource levels (for example, forests). For example, both Australia and New Zealand stated that they provided operational and training support to a number of national meteorological organizations in the Asia-Pacific region.

(c) Support for training

12. Training of officials responsible for environmental protection in developing countries or countries with economies in transition was reported by eight countries. They indicated that some of this training addressed climate change. For example, Japan had hosted seminars for administrative officers in the Asia-Pacific region on the science of climate change and related policies and measures. Some Parties explicitly indicated that scholarship and exchange programmes were an important component of their efforts.

C. Programmes that directly reduce greenhouse gas emissions or enhance carbon sequestration

13. Programmes that directly reduce greenhouse gas emissions or enhance carbon sequestration in developing countries or countries with economies in transition were reported by 14 Parties. Many of these programmes comprise a number of components: training, research, feasibility studies, construction, and monitoring.

(a) Energy supply

14. Thirteen Parties reported projects that would result in the installation of renewable energy supply technologies (primarily solar, wind, small hydro and biomass) in developing countries. New Zealand also described a number of initiatives directed towards assessing the viability of implementing geothermal power. Ten Parties noted that they were supporting projects to increase the efficiency of energy generation from existing fossil fuel sources or that would result in switching to less carbon-intensive fossil fuels. For example, Germany reported that it had supported the ecologically oriented retrofits of electric power plants in countries with economies in transition. Four Parties described projects to reduce greenhouse gas emissions from the transmission and distribution of energy produced from fossil fuels.

15. Five Parties indicated that they were supporting programmes to improve the safety, management, and monitoring of nuclear power facilities, particularly in countries with economies in transition. Several also noted that they were providing assistance that would facilitate structural changes in the energy sector through energy market reforms or the promotion of least cost planning. For example, the United States reported a number of initiatives in support of energy sector privatization and market reforms in developing countries and countries with economies in transition.

(b) Energy demand in the residential, commercial, and industrial sectors

16. Various Parties also described projects that would introduce more energy-efficient technologies and better energy management practices in the residential, commercial, and industrial sectors. While some of these activities were directed at specific facilities, many activities covered a much broader range. For example, the Programme on Cooperation with Eastern Europe (PSO Programme) in the Netherlands supported the development of national energy efficiency policy plans in Poland and Hungary.

(c) Transportation

17. A few Parties indicated that they were supporting projects in developing countries that would result in new or improved infrastructure for rail transport and urban public transit. Canada, for example, stated that it had provided funding for the planning and delivery of railway infrastructure in 22 developing countries.

(d) Forestry

18. Twelve Parties described projects to enhance carbon sequestration in forests in developing countries. These projects focused on improving forest management practices, encouraging agroforestry, supporting afforestation or assisting in the designation and monitoring of protected areas. Finland reported that it was supporting such projects in more than 20 developing countries.

(e) Agriculture

19. Finland and France described projects that would enhance carbon sequestration in agricultural soils in developing countries, while Germany and the United States noted that they were supporting projects that would help to reduce methane emissions from livestock. Given the general assistance provided for agricultural development activities through official development assistance, this category appears to be significantly underrepresented in national communications.

(f) Adaptation

20. The absence of clear definitions of adaptation technology categories probably limited reporting by Annex II Parties. Four Parties specifically identified projects targeted at facilitating climate change adaptation in developing countries. The most common objectives of these projects were to improve coastal zone management and limit desertification. Adaptation-related initiatives were described most extensively in the United States national communication, where 11 specific projects were described.

III. PRIVATE SECTOR COOPERATION

A. Support for information networks and clearing-houses

21. Six Parties indicated that they had established organizations expressly designed to link private sector companies in their respective countries with private sector companies in developing countries or countries with economies in transition. Such networks and clearing-houses provide companies with information on business opportunities that will, if followed up, result in the transfer of technology. Examples include the Technology Partnership Initiative (United Kingdom), and the Committees on Renewable Energy, Commerce and Trade, and on Energy Efficiency and Trade (United States).

B. Support for feasibility studies and design work

22. Two Parties provided funding for feasibility studies of potential private sector projects that, if they are implemented, could result in the transfer of technology to reduce greenhouse gas emissions or enhance carbon sequestration.

C. Financial support for joint venture investments

23. Four Parties indicated that they had provided co-financing for joint venture investments, involving private sector companies in their own countries and in a developing country, to produce and transfer environmental technologies that would reduce greenhouse gas emissions or enhance carbon sequestration.

Appendix

NATIONAL COMMUNICATIONS OF ANNEX II PARTIES REVIEWED FOR THIS DOCUMENT

Australia
Austria*
Belgium* 1/
Canada
Denmark
Finland
France
Germany
Greece*
Ireland
Italy
Japan
Netherlands
New Zealand
Norway
Portugal
Spain*
Sweden
Switzerland
United Kingdom of Great Britain and Northern Ireland
United States of America

---

* Technology transfer not addressed in national communication.

1/ Belgium ratified on 16 January 1996 and will become a Party on 15 April 1996.

- - - - -